

Lithocolletis glaserorum spec. nov.
(Lepidoptera, Lithocolletidae)

By GERFRIED DESCHKA

Brief Diagnosis: Thorax with one white central band. Forewings pale orange, markings white. Front margin with three or four costal strigulae, the fourth either insignificant or missing; inner margin with three strigulae. The first costal mark in the centre of the wing is extended as far as the base of the wing. No basal stripe. Front margin has an indentation before the wing-tip. The tip has a dark border, with a black spot.

Holotype ♂: Frons, frontal hair and basal segments of the antennae pure white. Antennae white, segments with very delicate darker rings. Eyes black. Thorax brilliant orange with a broad white central band. Abdomen whitish. Front legs white with very dark rings; mid and hind pairs of legs white, with faint darker variegations. Ground colour of the fore wings brilliant pale orange, markings white. Fore wings without basal stripe. Pure white from the first fore wing costal mark to the base, so that a white wedge radiates outwards from the base to the top of the first costal mark (first costal mark extended to the base). The first dorsal strigula appears as a small white patch near the base, which is joined to the wing base by a very narrow bridge on the inner edge. This is followed by two strigulae edged on the inside with very faint dark marks. On the costa a further two strigulae with delicate, dark markings on the inside, follow the first costal strigula. The fourth costal mark, near to the wing tip, is scarcely discernible. Wing tips delicate lustrous violet, with black borders and a distinct black spot just short of the tip. On the front margin, close to the tip, a slight indentation. The fringes on this indentation have black tips. Fringes of the fore wing and the hind wing white. Wing span 4.2 mm.

Male genitalia symmetrical, slightly sclerotized and remarkably small for the genus. Valves broad, curved outwards and thinly edged on the inner side with many incurved bristles. In the last third a large, approximately triangular protrusion with a more strongly chitinised tip protrudes from the surface of the valves; on this protrusion two irregular rows of a few short setae. Tegumen broad, round, with a narrow uncus which ends in a blunt point; the uncus has two lateral rows of bristles near the tip; the uncus tip extends somewhat beyond the valves. Aedeagus longer than valves, in ventral view shaped like a thin pear, in lateral view like an elongated S, broader at the base than in the middle or at the tips. The aedeagus has a forked end, with one shorter and narrower tip and one longer and wider. Ventral scale shorter than the valves, tongue-shaped, with a saddle-shaped indentation at the end; distal edge thinly fringed with very fine hairs. Tegumen sharply bent, no process. Genital Preparation No. 331 (Deschka).

Holotype 1 ♂ labelled: "Hispania, Cataluna, Port Bou 0-300m, 9-24.vi.64, leg. M. u. W. Glaser, *Lithocolletis glaserorum* DESCHKA, G. Deschka det. Gen.-Prep. Nr. 331. Holotypus". At present time in coll. Deschka.

Paratypes: 4 ♂♂, 2 ♀♀ labelled: "Hispania, Cataluna, Port Bou 0-300 m, 9-24.vi.64, leg. M. u. W. Glaser. *Lithocolletis glaserorum* DESCHKA.

G. Deschka det. Paratypus". At present time in coll. Glaser and Deschka. Female genitalia symmetrical. Postapophyses and antapophyses approximately the same length. Both apophyses have the same width; only the postapophysis has a minute extension in the centre. Sterigma remarkably strongly sclerotized, broadly conical and projecting some distance from the 7th segment. Signum bursae clearly sclerotized, with two tips in the shape of a swallow-tail. The form of the sterigma could well be another good distinguishing feature.

I dedicate the new species to Margit and Wolfgang Glaser of Vienna, who collected it in Port Bou and who placed their collection of *Lithocolletis* at my disposal for identification. I owe them my particular thanks.

Remarks

The species of the genus *Lithocolletis* are a very uniform group, whose representatives are closely related to each other. In order to be fair to the present state of research it is absolutely necessary to employ modern methods of morphological and anatomical investigation. Only in this way can an insight into the points of relationship between the individual representatives be guaranteed. Unfortunately, no such investigations by any of the writers of the last century and the beginning of this century are available to us and consequently there are no opportunities for comparisons. Only in the future will attempts be made to investigate and evaluate the morphology of the genitalia of early type material. Above all, the author regrets that, for all the species of *Lithocolletis* which are important to this work, no (or only few) results of investigations are available. It is very much regretted, that almost no investigations of south and west European material have been published; similarly, pertinent investigations of the American representatives are lacking. The author was therefore compelled either to check the present material by using traditional methods without taking into consideration the result of modern microscopic investigations or himself to investigate the genitalia of a number of species from western and southern Europe. Both possibilities were utilized to the full. Furthermore, descriptions of the holotype and copies of the drawings published here were sent to the most important authorities in this field, for comparison with their collections and literature. Over and above this, some original descriptions had to be procured.

The lack of knowledge of the biology, and especially of the food-plants, of the new species caused great difficulties. Since almost the whole genus is made up of monophagous or oligophagous representatives, a knowledge of the host-plant would have enabled one to exclude many otherwise similar species. By investigation of the wing colour and marking and particularly of the male genitalia, it became more and more obvious to the author that *Lith. glaserorum* can only be a *Fagaceae* miner. To-day it can be assumed with great probability that the species lives on a hard-leaved oak.

In order to exhaust all possibilities in the investigation which may serve to clarify the question of the host-plant, the author asked the two collectors of the type-sample of *Lith. glaserorum*, Frau Margit and Herrn. Ing. Wolfgang Glaser, to characterise the plant association on which the new species was found. Since no notes were made while the two collectors were in Port Bou, the attached details are based only on a reconstruction from memory.

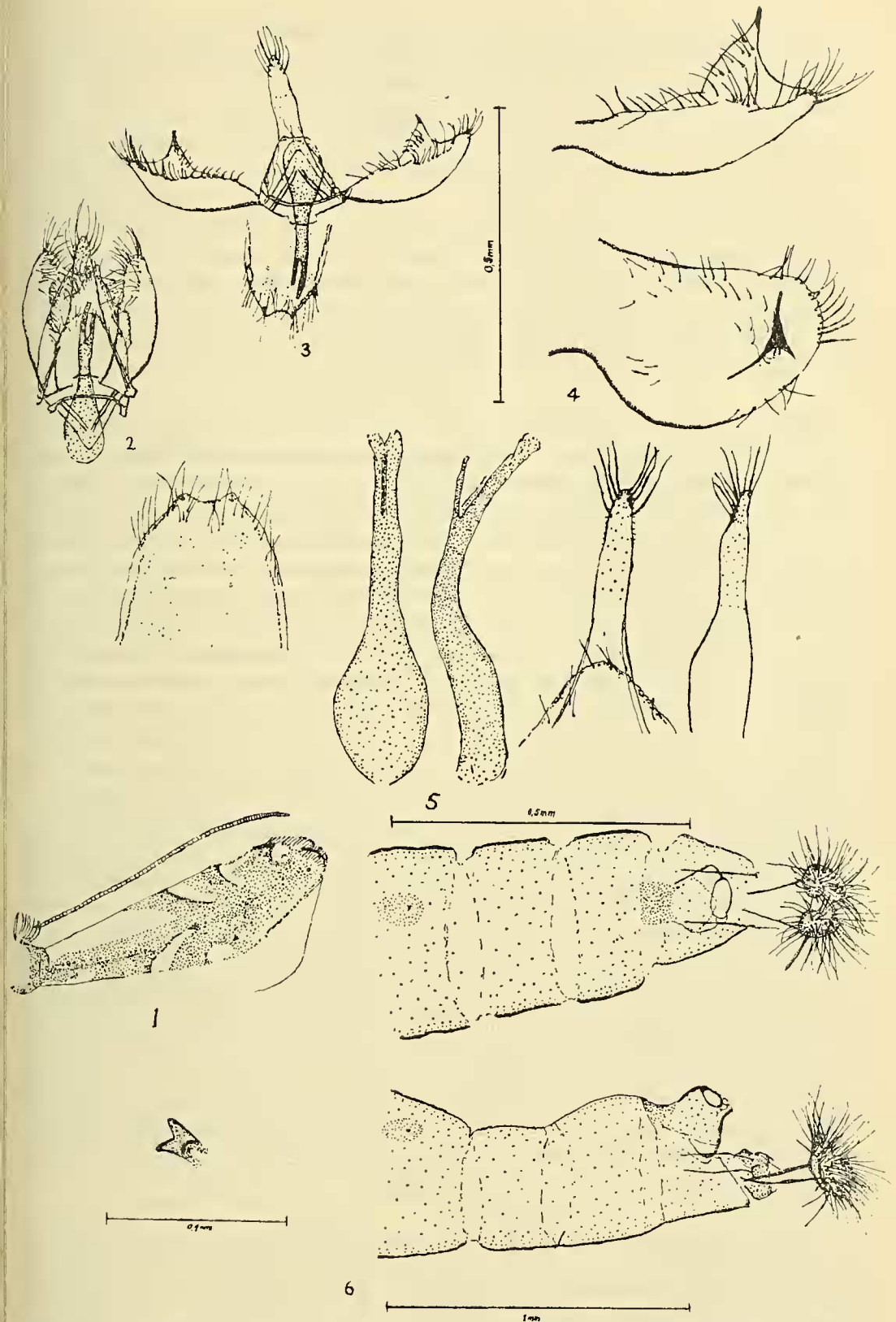


Fig. 1 *Lithocolletis glaserorum* sp. nov. Holotype forewing pattern; Fig. 2. Male genitalia closed. Fig. 3. Male genitalia opened (Preparation No. 331 Deschka). Fig. 4. Various views of the valves. Fig. 5. Ventral plate seen from below. Aedeagus, ventral and lateral views. Uncus, dorsal and lateral views. Fig. 6. Paratype female genitalia, ventral and lateral views (Prep. No. 350). Signum bursae greatly enlarged.

The place where they were found lies directly on the edge of an incline, in a river-bed which is dry in summer and autumn. Nearby are open as well as cultivated vineyards. The open vineyards cover one side of the valley and have scarcely any overgrowth worthy of mention. The river-bed in which the species was captured in daylight, harbours above all *Lavandula stoechas* L., *Rubus ulmifolius* Schott (?), *Potentilla* spec., *Euphorbia* spec., *Malva moschata* L., *Tamarix gallica* L., *Typha* spec. is found in damp places and *Mentha* spec. in pools. *Cistus salvifolius* L., *Foeniculum vulgare* Miller, *Genista anglica* L. and *Ononis* spec. grow on the slopes. Particularly important for the present work are: *Quercus ilex* L., perhaps also *Qu. ilex* var *suber* (L.) Pereng and *Castanea sativa* Mill. As already explained, only the last named *Fagaceae* can be seriously considered as the host-plant of *Lith glaserorum*.

With regard to the systematic position of the new species a few main points should be explained. *Lith. glaserorum* does not stand close to any palaeartic species. The characteristic wing markings with the extended first costal strigula, the missing basal stripe and the small indentation near to the tip have no similarity with any representative of palaeartic fauna known to the author. The same applies also for the South African (Vari). Two species were found among the American fauna which may have a direct relationship with the new species without, however, being identical to it: *Lithocolletis fitchella* Clemens 1860 and *Lithocolletis leucothorax* Walsingham 1907. The first species differs from *Lith. glaserorum* in its completely silver-white thorax, the pale saffron-yellow antennae, the different ground-colour, the five (instead of four) costal strigulae and their more definite basal margin and the completely different position and form of the inner margin strigulae; *Lith. leucothorax* differs from *L. glaserorum* in its pale saffron-yellow antennae, the much thinner first costal strigula, the lack of a black spot near the wing tip, the basal stripe (shown in the drawing) and the completely different type of costal marking. In spite of these marked differences, the three species have common features: the seemingly very similar wing-pigment, the remarkable first costal strigula which extends as far as the wing base, and the lack of the basal stripe (not mentioned in the original diagnosis of *Lith. leucothorax*—a white basal stripe is faintly indicated in fig. 2, plate XXI of the Trans. Am. Ent. Soc. XXXIV). *Lith. fitchella* is an oak miner. Without doubt, *Lith. glaserorum* is to be classified in Group I of the grouping according to Annette F. Braun (cylindrical caterpillar, white marking features, more darkly-edged at the base) and this assumption can also be justified if the larva is still unknown, since the marking features given by Braun are valid for the whole group without exception.

I have consulted Herrn Karl Burmann in Innsbruck, Dr. J. Klimesch in Linz, Dr. F. Gregor in Brünn and Herrn and Frau Glaser in Vienna on various problems which came up during the description of the species. They have compared my diagnosis and my drawings with their literature and their collections of specimens and given me the benefit of their wide experience. I thank them for their help.

I would also like to thank Mr. F. H. Firth for his handling of the English translation of this paper.